

Use Attainability Analysis
for
WBID 1218 North Deepwater Creek

Submitted by
SES Inc.

to
Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): Deepwater Creek	
Missouri Water Body Identification (WBID) Number: 1218	
8 digit HUC code: 10290108	County: Bates/Henry
Upstream Legal Description (from Table H): T41N R29W Sec 35	
Downstream Legal Description (from Table H): T40N R28W Sec 5	
Number of sites evaluated: 3	
List all site numbers, listed consequently upstream to downstream: 1,2,3	

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s): Ballard R-11 School WWTF MO 0129321
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III. UAA Surveyor (please print legibly)

Name of Surveyor: Aaron Ball	Telephone Number: (913)307-0046
Organization/Employer: SES, Inc.	

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: Aaron Ball **Date:** 11.09.07

Hartwell

Montrose

Appleton City

A map of the Deepwater Creek area. The creek is shown as a blue line with several purple dots indicating specific locations. The creek flows from the top left towards the bottom right. Roads are shown as yellow lines. A road labeled '1218' runs vertically on the left side. A road labeled 'N DEEPWATER CR.' runs diagonally from the top right towards the bottom left, crossing the creek. The map also shows some green areas representing fields or forests.

Site 1

Site 2

Site 3

WBID # 1218
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10/24/07	17:47	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		Off of St. Hwy D
Current Weather Conditions:	clear	Facility Name:	Ballard R-11 School WWTF
Weather conditions for the past 10 days:	2.17 inches	Permit Number:	MO 0129321
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0404733	4240659		9.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0405005	4240607		7.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
18	Downstream	19	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1218
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 50	% Sand	% Silt	% Mud/Clay 50	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
Murky					
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1218
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 10/24/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1218</u> Site #: <u>1</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0404733</u> UTM Y: <u>4240659</u> +/- <u>9</u> (meters) 11 UTM X: <u>0405005</u> UTM Y: <u>4240607</u> +/- <u>7.2</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Aaron Ball, Drew Dodson</u>	Dissolved Oxygen Date: <u>10/24/07</u> Time: <u>17:50</u> Dissolved Oxygen: <u>6.7</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>11.8</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.7	0.20	0.1	0.05	0.8	0.70	0.4	0.30	0.6	0.30	0.5	0.20	0.4	0.20	0.2	0.15	0.2	0.15	0.2	0.10
2	1.0	0.15	1.4	0.20	0.2	0.05	1.6	0.75	0.8	0.40	1.2	0.60	1.0	0.30	0.8	0.20	0.4	0.15	0.4	0.20	0.4	0.10
3	1.5	0.25	2.1	0.30	0.3	0.05	2.4	0.75	1.2	0.40	1.8	0.90	1.5	0.50	1.2	0.20	0.6	0.15	0.6	0.20	0.6	0.10
4	2.0	0.40	2.8	0.55	0.4	0.05	3.2	0.90	1.6	0.40	2.4	0.90	2.0	0.40	1.6	0.20	0.8	0.10	0.8	0.25	0.8	0.15
5	2.5	0.50	3.5	0.75	0.5	0.05	4.0	0.95	2.0	0.30	3.0	0.90	2.5	0.60	2.0	0.15	1.0	0.10	1.0	0.20	1.0	0.15
6	3.0	0.60	4.2	0.90	0.6	0.05	4.8	0.70	2.4	0.40	3.6	0.80	3.0	0.60	2.4	0.30	1.2	0.10	1.2	0.15	1.2	0.10
7	3.5	0.55	4.9	1.00	0.7	0.05	5.6	0.70	2.8	0.40	4.2	0.65	3.5	0.45	2.8	0.20	1.4	0.10	1.4	0.15	1.4	0.10
8	4.0	0.40	5.6	1.00	0.8	0.05	6.4	0.60	3.2	0.40	4.8	0.40	4.0	0.35	3.2	0.25	1.6	0.10	1.6	0.15	1.6	0.10
9	4.5	0.20	6.3	1.00	0.9	0.05	7.2	0.35	3.6	0.30	5.4	0.30	4.5	0.30	3.6	0.20	1.8	0.10	1.8	0.10	1.8	0.05
Right Bank	5.0	0.00	7.0	0.00	1.0	0.00	8.0	0.00	4.0	0.00	6.0	0.00	5.0	0.00	4.0	0.00	2	0.00	2.0	0.00	2.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		riffle		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 11.09.07

WBID # 1218
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10/25/07	7:58	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		CR 14503
Current Weather Conditions:	clear	Facility Name:	Ballard R-11 School WWTF
Weather conditions for the past 10 days:	2.17 inches	Permit Number:	MO 0129321
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0405452	4239241		9.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0405347	4239498		5.7	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
20	Upstream	21	Downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1218
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 30	% Sand	% Silt 30	% Mud/Clay 40	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: Murky
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1218
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 10/25/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1218</u> Site #: <u>2</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0405452</u> UTM Y: <u>4239241</u> +/- <u>9</u> (meters) 11 UTM X: <u>0405347</u> UTM Y: <u>4239498</u> +/- <u>5.7</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Aaron Ball, Drew Dodson</u>														Dissolved Oxygen							
														Date: <u>10/25/07</u> Time: <u>8:00</u> Dissolved Oxygen: <u>5.9</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>10.6</u> (°C)							
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.7	0.30	0.7	0.70	0.5	0.35	0.7	0.50	1.0	0.65	0.7	0.50	0.7	0.55	0.6	0.10	0.7	0.60	0.5	0.25	0.7	0.40
1.4	0.75	1.4	1.00	1.0	0.35	1.4	0.70	2.0	1.00	1.4	0.90	1.4	0.80	1.2	0.40	1.4	0.65	1.0	0.30	1.4	0.50
2.1	1.00	2.1	1.00	1.5	0.40	2.1	0.75	3.0	1.00	2.1	1.00	2.1	0.70	1.8	0.50	2.1	0.75	1.5	0.30	2.1	0.50
2.8	1.00	2.8	1.00	2.0	0.40	2.8	0.65	4.0	1.00	2.8	1.00	2.8	0.70	2.4	0.55	2.8	0.70	2.0	0.40	2.8	0.50
3.5	1.00	3.5	1.00	2.5	0.35	3.5	0.60	5.0	1.00	3.5	1.00	3.5	0.60	3.0	0.50	3.5	0.55	2.5	0.65	3.5	0.55
4.2	1.00	4.2	1.00	3.0	0.35	4.2	0.50	6.0	1.00	4.2	1.00	4.2	0.60	3.6	0.50	4.2	0.50	3.0	0.50	4.2	0.65
4.9	1.00	4.9	1.00	3.5	0.30	4.9	0.40	7.0	1.00	4.9	0.85	4.9	0.50	4.2	0.35	4.9	0.40	3.5	0.50	4.9	0.60
5.6	0.80	5.6	1.00	4.0	0.20	5.6	0.40	8.0	1.00	5.6	0.60	5.6	0.45	4.8	0.30	5.6	0.30	4.0	0.40	5.6	0.60
6.3	0.40	6.3	0.60	4.5	0.10	6.3	0.30	9.0	1.00	6.3	0.40	6.3	0.30	5.4	0.20	6.3	0.30	4.5	0.30	6.3	0.40
7.0	0.00	7.0	0.00	5.0	0.00	7.0	0.00	10.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	7.0	0.00	5.0	0.00	7.0	0.00
pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 11.09.07

WBID # 1218
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10/25/07	9:04	Site Location Description (e.g. road crossing):
Personnel:	Aaron Ball, Drew Dodson		County Road
Current Weather Conditions:	clear	Facility Name:	Ballard R-11 School WWTF
Weather conditions for the past 10 days:	2.17 inches	Permit Number:	MO 0129321
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0407615	4238773		6.3	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0407826	4238634		7.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
22	Downstream	23	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 1218
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: <div align="center">none</div>				

Evidence of Human Use:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: <div align="center">none</div>				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
	13		20	65	2

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					Murky
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 1218
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Aaron Ball Date of Survey: 10/25/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1218</u> Site #: <u>3</u> Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0407615</u> UTM Y: <u>4238773</u> +/- <u>6.3</u> (meters) 11 UTM X: <u>0407826</u> UTM Y: <u>4238634</u> +/- <u>7.2</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Aaron Ball, Drew Dodson</u>	Dissolved Oxygen Date: <u>10.25.07</u> Time: <u>9:05</u> Dissolved Oxygen: <u>8.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>10</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.40	0.6	0.60	0.6	0.50	0.7	0.40	0.6	0.20	0.7	0.50	0.7	0.60	0.7	0.40	0.6	0.55	0.5	0.60	0.7	0.05
2	1.0	0.55	1.2	1.00	1.2	0.80	1.4	0.50	1.2	0.40	1.4	0.75	1.4	0.95	1.4	0.60	1.2	0.35	1.0	0.60	1.4	0.05
3	1.5	0.85	1.8	1.00	1.8	0.80	2.1	0.60	1.8	0.40	2.1	1.00	2.1	1.00	2.1	0.85	1.8	0.30	1.5	0.55	2.1	0.05
4	2.0	1.00	2.4	1.00	2.4	0.90	2.8	0.80	2.4	0.30	2.8	1.00	2.8	1.00	2.8	1.00	2.4	0.20	2.0	0.50	2.8	0.00
5	2.5	1.00	3.0	1.00	3.0	1.00	3.5	0.80	3.0	0.25	3.5	1.00	3.5	1.00	3.5	1.00	3.0	0.50	2.5	0.50	3.5	0.05
6	3.0	1.00	3.6	1.00	3.6	1.00	4.2	0.80	3.6	0.30	4.2	1.00	4.2	1.00	4.2	1.00	3.6	0.90	3.0	0.50	4.2	0.00
7	3.5	0.80	4.2	1.00	4.2	1.00	4.9	0.80	4.2	0.35	4.9	1.00	4.9	1.00	4.9	0.90	4.2	1.00	3.5	0.40	4.9	0.00
8	4.0	0.60	4.8	1.00	4.8	1.00	5.6	0.75	4.8	0.30	5.6	0.80	5.6	0.80	5.6	0.70	4.8	1.00	4.0	0.30	5.6	0.00
9	4.5	0.45	5.4	0.80	5.4	0.70	6.3	0.50	5.4	0.20	6.3	0.45	6.3	0.60	6.3	0.55	5.4	1.00	4.5	0.20	6.3	0.05
Right Bank	5.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	5.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 10/25/07

WBID# 1218



Site# 1 Photo ID# 18, Downstream



Site# 1 Photo ID# 19, Upstream



Site# 2 Photo ID# 20, Upstream



Site# 2 Photo ID# 21, Downstream

WBID# 1218



Site# 3 Photo ID# 22, Downstream



Site# 3 Photo ID# 23, Upstream